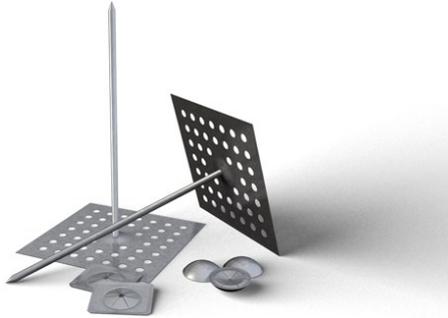




1) Stud-weld and Adhesively Adhered Insulation Pins and Hangers



Pyrotek supplies a range of pins and hangers to allow mechanical fixing of preformed insulation materials to various surfaces. *(Please refer Information page 'Pins and Hangers 512IP')*

This comprehensive range covers stud weld pins, plain perforated base hangers for adhesive attachment, and pressure sensitive adhesive (self adhesive) base hangers for hassle free installation.

PINS and HANGERS can be used with any type of insulation that can be pierced by the metal spindles. PINS are stud-weldable, made suitable for bonding either ferrous metals (mild steel or stainless steel pins) or aluminium (aluminium pins). *(See notes next page for a description of Stud Welding)

HANGERS comprise a range of pins mounted to perforated metal base plates that can be bonded to a workpiece using a suitable solvent or water based mastic adhesive or a pre applied self adhesive. Plain metal HANGERS can be used on steel, aluminium, glass, timber, brickwork, concrete, blockwork and plaster.

Self adhesive HANGERS have a solid metal base plate incorporating a self-adhesive foam pad backing. They can be used on steel, aluminium and glass. But are not suitable for use on timber, brickwork, concrete, blockwork, plaster or other porous surfaces.

After application of the PIN or HANGER and piercing of the insulation, a self-locking washer (CLIP or DOME) is applied over the protruding spindle to retain the insulation. CLIPS are used where the protruding spindle section can be cut away or bent over to avoid potential spiking of the operator.

DOMES are used on the spindle to cover the protruding section and make the sharp spindle end safe for the operator.

FEATURES

- Simple and easy to apply
- Can be used to retain any type of insulation that can be pierced by the pin
- Different fixing methods available:
 - Welding (Bimetallic stud welding)
 - Self adhesive (Pressure sensitive adhesive)
 - Mastic adhesive (Liquid nails)
- Range covers units for all types of substrates
- One type of pin or hanger can be used to hang multiple types of insulation

APPLICATIONS

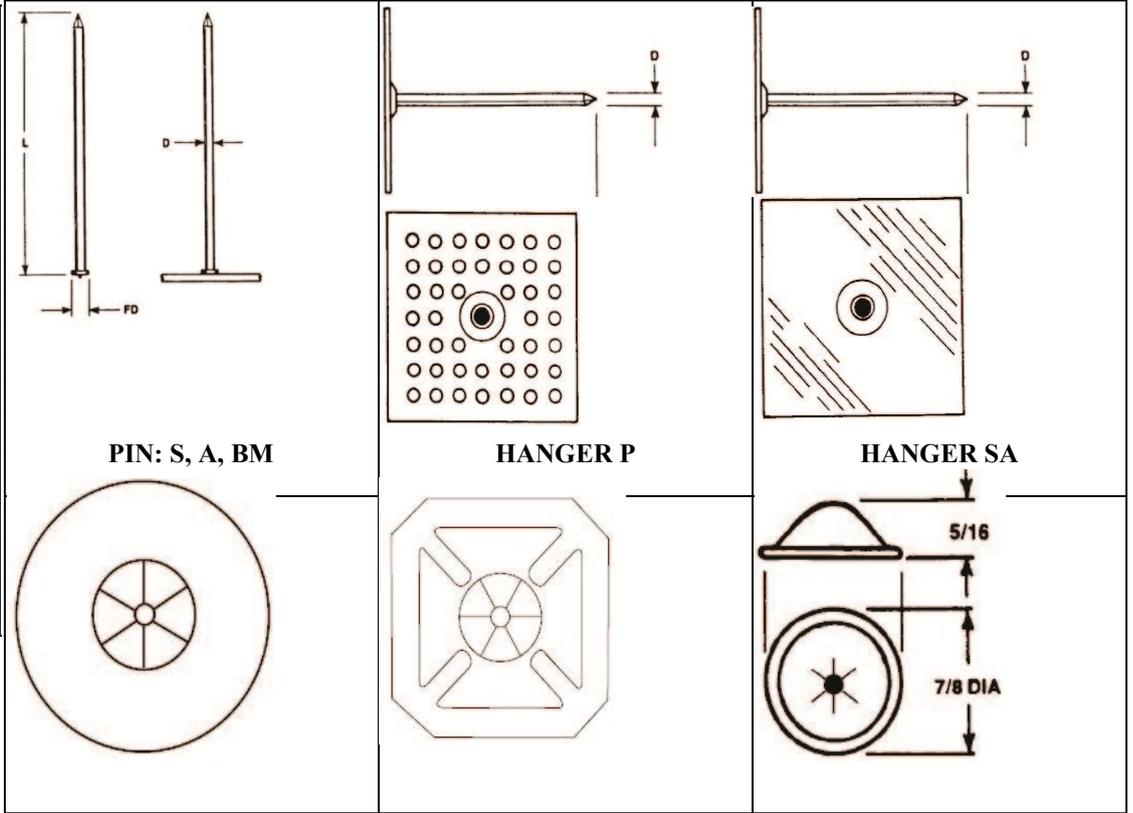
- HVAC ducting
- Noise insulation attachment in marine engine rooms, bus and truck engine bays, compressor enclosures etc.

BENEFITS

- Low cost assembly
- Reduced inventory needs
- Multiple substrate capability (Hangers)

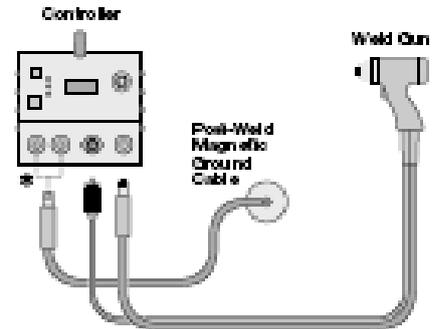
STANDARD PRODUCT
PINS
PIN S
PIN A
HANGERS
HANGER P 50
HANGER P 62*
HANGER P 90
HANGER P 114*
HANGER SA 12
HANGER SA 42
HANGER SA 62*
HANGER SA 112
CLIPS
CLIP R (Round)
CLIP S (Square)
DOMES
DOME

*Prepackaged with CLIPS



What is Stud Welding?

Stud welding is a high speed joining processing which a pin or similar metal part can be affixed to a metal workpiece. Stud welding systems consist of a power supply and/or "Controller", a stud gun, and cables to tie the system and workpiece together.



Process: The pin is placed (with a hand tool called a Stud Gun) in close contact with the base metal (workpiece). Electrical current flows through the pin to the workpiece and an electric arc is formed in the small gap between the pin base and the workpiece. This arc creates intense local heat in the pin base and the metal surface. This heat melts the base of the pin and the adjacent metal of the workpiece. The pin is then forced into the melted area and held in place until the metal solidifies.

This high quality fusion weld is completed in milliseconds and is accomplished by one of two major weld methods.

- 1: Capacitor Discharge (CD) welding
- 2: Arc Stud Welding.



What is Stud Welding?

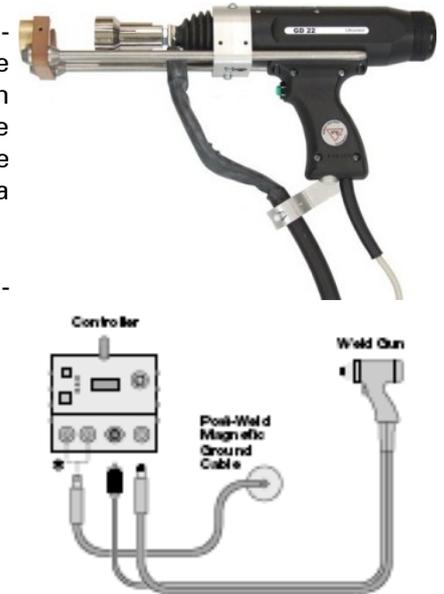
Stud welding is a high speed joining process which a pin or similar metal part can be affixed to a metal workpiece.

Stud welding systems consist of a power supply and/or "Controller", a stud gun, and cables to tie the system and workpiece together.

Process: The pin is placed (with a hand tool called a Stud Gun) in close contact with the base metal (workpiece). Electrical current flows through the pin to the workpiece and an electric arc is formed in the small gap between the pin base and the workpiece. This arc creates intense local heat in the pin base and the metal surface. This heat melts the base of the pin and the adjacent metal of the workpiece. The pin is then forced into the melted area and held in place until the metal solidifies.

This high quality fusion weld is completed in milliseconds and is accomplished by one of two major weld methods.

- 1: Capacitor Discharge (CD) welding
- 2: Arc Stud Welding.

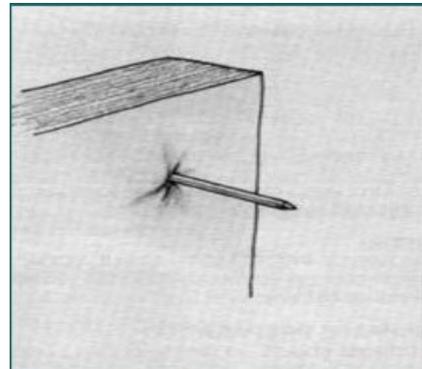


Application of PIN: S, A, BM

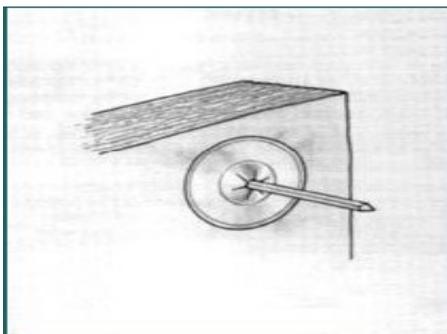
1. Weld Pins in place



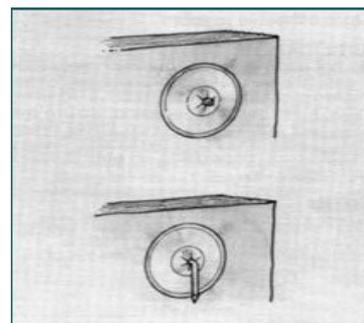
2. Install Insulation on Pins



3. Press Washers on Pins to secure insulation



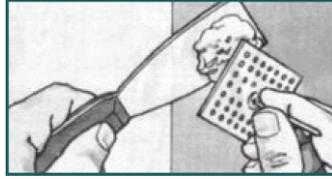
4. Either clip pin off at washer or bend pin over



Application of HANGER P



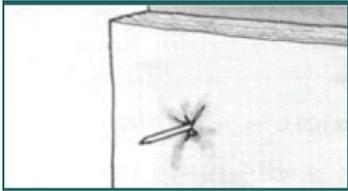
1. Wipe surface clean, HANGER must be applied to a clean dry surface



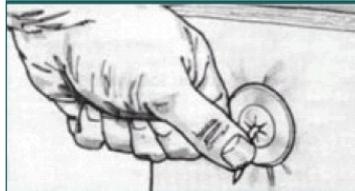
2. Apply adhesive to HANGER. spread Mastic adhesive onto the preformed base with a putty knife.



3. Locate HANGER. Press into position with a twisting motion to allow even spread of the adhesive. The adhesive should protrude through the perforations and beyond the edges of the base.



4. Install Insulation:
NB ALLOW ADHESIVE TO DRY THOROUGHLY before hanging insulation, usually 24-72 hours. Drying time will vary with temperature and adhesive used.



5. Secure with a CLIP or DOME. Secure the insulation with a self locking CLIP and then bend over or clip off excess spindle length or use a DOME if you do not wish to touch the spindle.

Application of HANGER SA



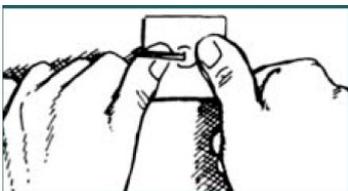
1. Wipe Surface Clean, HANGER must be applied to a clean dry surface



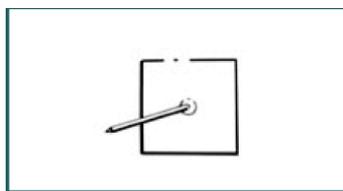
2. Peel off release backing.
NB: Double faced foam tape has a one year active shelf life.



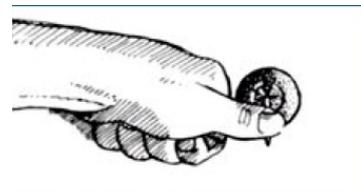
3. Locate HANGER. Select location before contact with the surface. Press HANGER firmly into position.



4. Apply Firm Pressure:
NB: VERY firm finger pressure should be applied all around the base of the anchor.

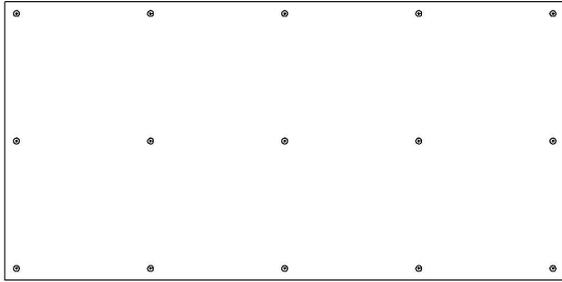


5: Allow to stand 15-20 minutes to allow the self adhesive time to build strength before location of the insulation.



6: Secure with a CLIP or DOME. Secure the insulation with a self locking CLIP and then bend over or clip off excess spindle length or use a DOME if you do not wish to touch the spindle.

A typical pin layout



Ideal distance measures between pins and from edges is dependent on the material, its weight and other installation environment.

Guidelines for using HANGER SA.

1. HANGER SA must be applied to a clean, non-porous surface that is completely free of all oil film, dust, rust etc.
2. Not recommended on most painted surfaces, drywall or metal ceilings where the metal is exposed on the reverse side to direct sunlight.
3. Best results are obtained when ambient temperatures are above 10°C at time of application.
4. In use, temperature range for the foam tape is from -20°C to +90°C.
5. Loading should not exceed 1.4kg per HANGER.
6. Base must be applied with very firm pressure. DO NOT TWIST during application. DO NOT remove release (backing) paper until ready to use.
7. Insulation may be applied after 15-20 minutes of the bond being made.

Choice of Hanger

Factors influencing the choice of hanger are:

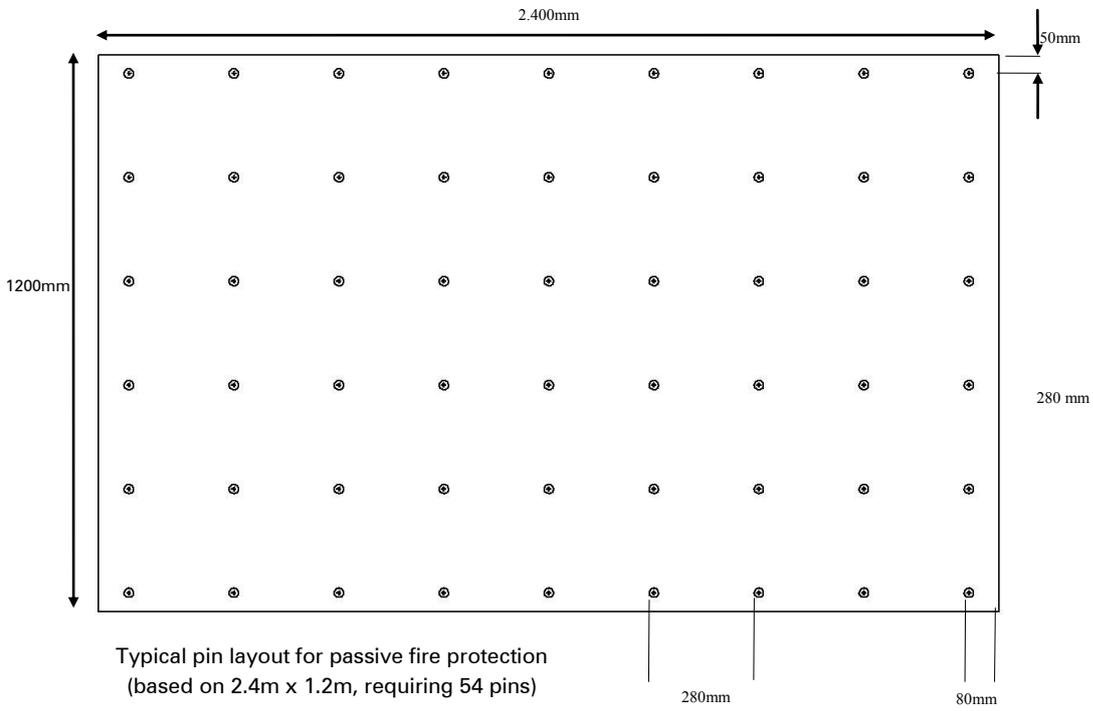
1. Thickness and weight of the insulation to be fixed.
2. Glue line temperature.
3. Type and condition of the surface.
4. Corrosion Resistance. The metal pins are zinc coated and give good corrosion resistance.
5. Thermal Conduction. In some situations the metal pins permit thermal bridging. For low temperature applications (below 120°C) Nylon Hangers can be obtained.
6. Fire resistance. Metal Hangers are completely fire resistant but the adhesively bonded HANGER P and HANGER SA systems rely on the heat resistance of the adhesive to hold the insulation in place. PINS weld to the base metal of a unit will hold in the event of a fire.
7. Speed of application: HANGER SA is much faster to apply and allow attachment of the insulation.
8. Capital Equipment Cost. HANGER P and SA do not require any significant capital outlay. PINS require suitable Stud Welding equipment to be used.
9. Availability of Electrical Power. PINS require a suitable electrical power source close to the application point to power the stud welding equipment. HANGER P and SA do not require any electrical power.

Health and Safety

- ***Extreme care should be exercised when working around hangers, the spindles can cause serious injury***
- ***Dispose of release liner immediately as it can cause a slip hazard***
- ***Refer to manufacturers information on use of any solvent borne adhesive used with HANGER P.***
- ***Ensure that all electrical equipment is in good operating condition and that proper precautions are taken when dealing with high current high voltage electrical systems***

USAGE

Insulation pins with a 50mm x 50mm perforated metal base require 6-8 grams of adhesive per pin. As an example, at a typical pin layout of approximately 280mm centers for passive fire protection. At a sheet size of 1.2m x 2.4m 54 pins are required; this means 324 – 432 grams of adhesive used per sheet.



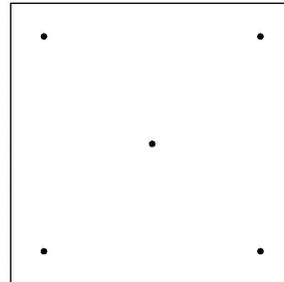
This drawing is only given as a guide. Please contact your local Pyrotek representative for correct pin layout for specific structural fire protection products. Values stated in this Information Page represent typical values.

Example :

Based on product weighing up to 7kg/m²

For acoustic insulation

- 5 pins / m², as per adjacent drawing
- 6 - 8 gm / pin
- 30 - 40 gm adhesive / m²



Die pattern (no.5)

2) C- Channel Fixing



'C' channel or a folded return is often used to protect the edge of a product from damage or contamination for instance in an electrical cabinet or compressor enclosure.

It is also used to hold in place, or as a secondary fixing point in conjunction with adhesive or mechanical fixing systems.

Caveats: Specifications are subject to change without notice. The data in this document are typical of average values based on tests by independent laboratories or by the manufacturer and are indicative only. Materials must be tested under intended service conditions to determine their suitability for purpose. The conclusions drawn from acoustic test results are as interpreted by qualified independent testing authorities. Nothing here releases the purchaser/user from responsibility to determine the suitability of the product for their project needs. Always seek the opinion of your acoustic or mechanical engineer on data presented by the manufacturer. Due to the wide variety of individual projects, Pyrotek NC is not responsible for differing outcomes from using their products. Pyrotek disclaims any liability for damages or consequential loss as a result of reliance solely on the information presented. No warranty is made that the use of this information or of the products, processes or equipment to which this Information Page refers will not infringe any third party's patents or rights. DISCLAIMER: This document is covered by Pyrotek standard Disclaimer, Warranty and © Copyright clauses. See www.pyroteknc.com/disclaimer.

AUSTRALIA 1300 928 322 (1300 WAVEBAR) +61(0)2 8868 2088	CHINA +86(0)755 8601 6449 HONG KONG +852 2548 4443	CZECH REPUBLIC +420 516 527 195 +420 725 373 966	DUBAI +971 (50) 624 9254 INDIA +91 9819 330 499 +91 2137 668 000	NEW ZEALAND 0800 226 878 427 (0800 ACOUSTICS) +64(0)9 272 2056	TAIWAN +886 6 313 1267 INDONESIA +62 81 1889 1917	UNITED KINGDOM +44(0)1908 561155 TURKEY +90 212 230 3033	USA +1 509 991 8548 +1 856 816 0194
---	---	---	--	--	--	---	--

